### Clinical Algorithm for Congenital Hypothyroidism Abnormal Screen Result

#### ABNORMAL screen result for CONGENITAL HYPOTHYROIDISM

- Abnormal screen result: TSH >50 mIU/L
  - Immediately measure serum fT4, TSH AND
  - Immediately initiate therapy L-thyroxine (10-15 mcg/kg QD) AND consider discussing the value of an urgent thyroid uptake scan with local Pediatric Endocrinology

- Borderline screen result: TSH 25 – 50 mIU/L
  - Repeat screen
  - If repeat borderline screen result: TSH 25 – 50 mIU/L
    - Immediately measure serum fT4, TSH
  - If TSH is elevated after receipt of the serum TSH result, initiate therapy L-thyroxine (10-15 mcg/kg QD)

### MEDICATION

#### Initial Starting Dose:
L-thyroxine 10-15 mcg/kg PO once daily

- Give as tablet or crush the tablet on a spoon and give with a few milliliters of breast milk or water
- Do not dispense from pharmacies as a suspension; always dispense in tablet form
- Do not administer with soy, fiber or iron

#### Titrate dose based on fT4 and TSH.

### MONITORING

- Aim for fT4 in the upper limit of the normal range for age and a TSH in the low-normal range (0.5 to 2 mIU/L). Once fT4 and TSH are normalized, monitor primarily with TSH.

- Follow serum fT4 and TSH
  - At 2 and 4 weeks after initial treatment started
  - Q1-2 months for 6 months
  - Q3-4 months between 6 months and 3 years of age
  - Q6-12 months from 3 years until end of growth
  - 4 weeks after any dose change

- Clinical examination, including assessment of growth and development
  - Q2-3 months until 3 years of age

### References:
2. Adapted initially by Andrea Chambers, MD, Stollery Children’s Hospital, Edmonton, Alberta; and Rose Girgis, MD FRCPC, Stollery Children’s Hospital, Edmonton, Alberta
3. Revised by Dr. Fiona Bamforth, Dr. Kareena Schnabl and Susan Christian, AHS Genetic Lab Services; Dr. Jonathan Dawrant and Dr. Stephen Wainer, Alberta Children’s Hospital; Dr Christine Kyriakides and Dr. Elizabeth Rosolowsky, Stollery Children’s Hospital; Dr. Gloria Keays, AHS Edmonton Zone